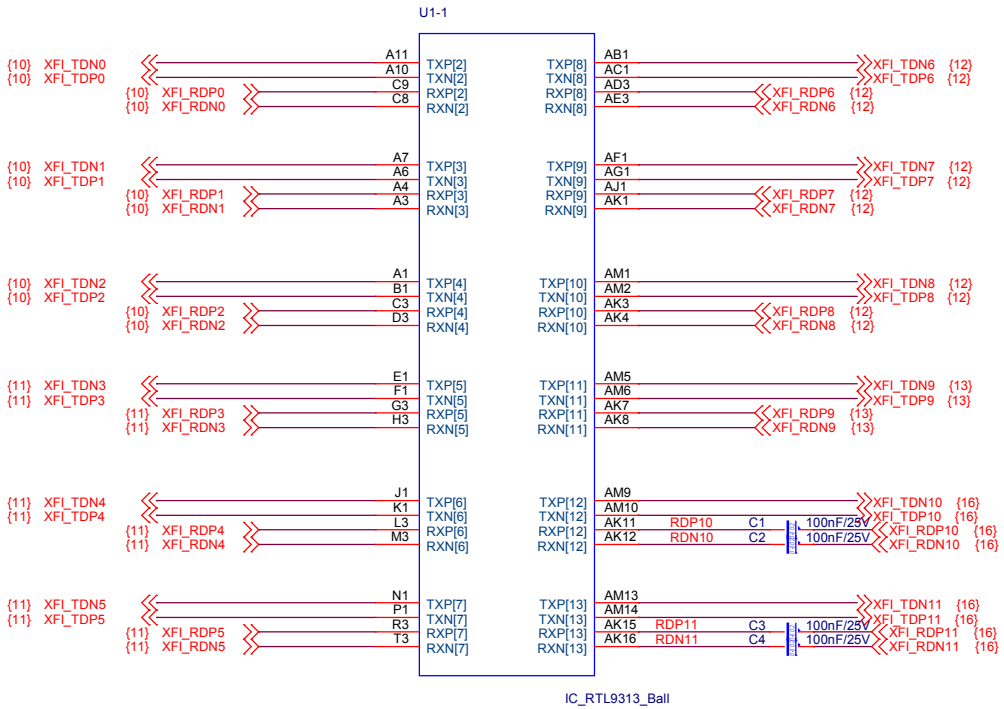
Serdes of RTL9313



In order to trace layout convenient,
the serdes tx polarity are reversed.
It need to swap the polarity in serdes
setting

Port10 &11 COMBO SWITCH

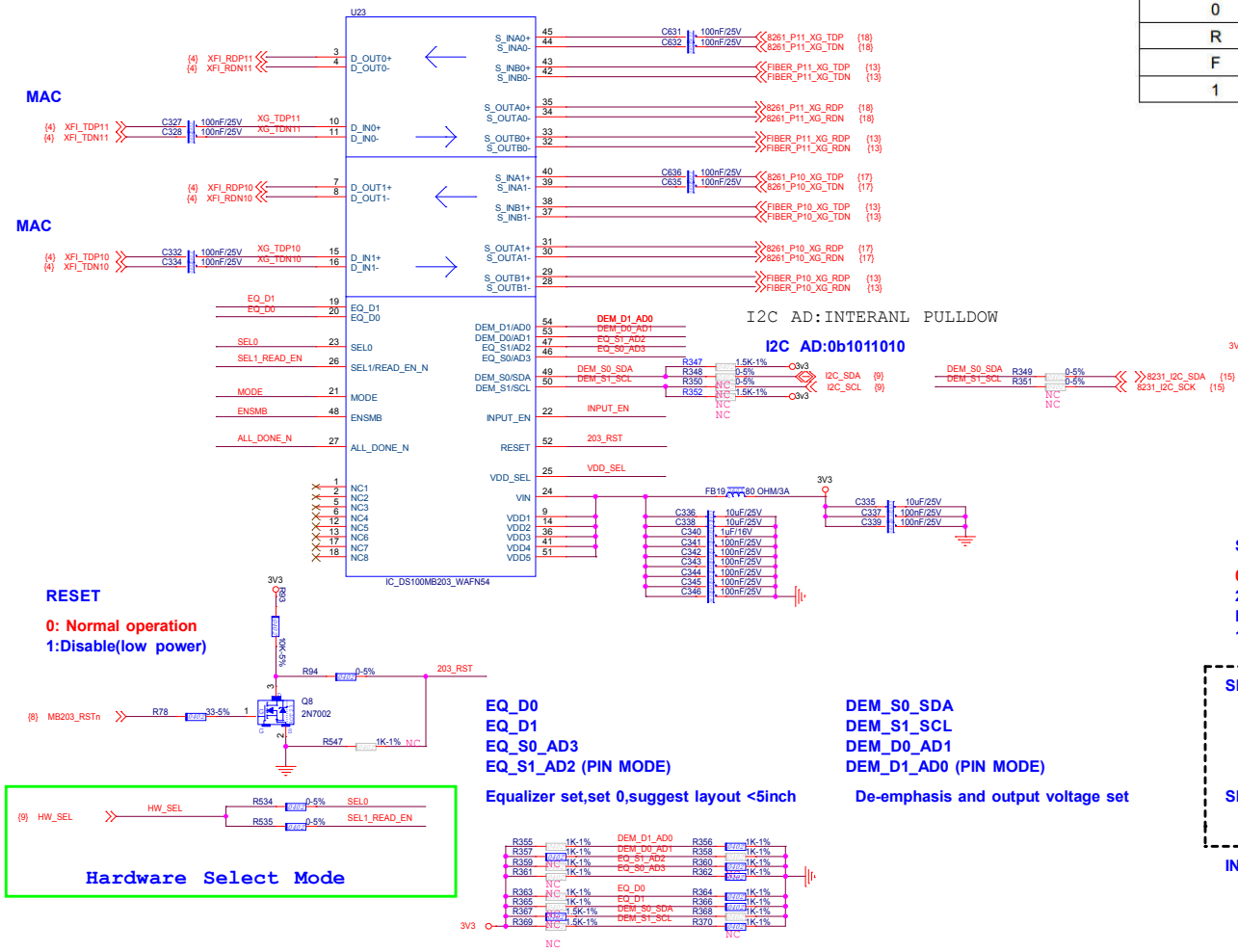
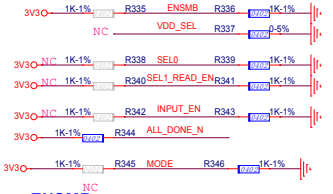


Table 1. 4–Level Control Pin Settings

LEVEL	SETTING	RESULTING PIN VOLTAGE	
		3.3-V MODE	2.5-V MODE
0	Tie 1 kΩ to GND	0.1 V	0.08 V
R	Tie 20 kΩ to GND	1/3 x V_{IN}	1/3 x V_{DD}
F	Float (leave pin open)	2/3 x V_{IN}	2/3 x V_{DD}
1	Tie 1 kΩ to V_{IN} or V_{DD}	V_{IN} – 0.05 V	V_{DD} – 0.04 V



ENSMB
1:SMBUS SLAVE MODE
FLOAT: READ EXTERNAL E2PROM
0: PIN Mode(Debug)

VDD_SEL
FLOAT: 2.5V MODE
0: 3.3V MODE

SEL0 pin mode for Port0
0:Port0 select B0 INPUT,B0 OUTPUT --choose fiber
20K ohm to GND:Port0 select B0 INPUT,A0 OUTPUT --mix
Float:Port0 select A0 INPUT,B0 OUTPUT --mix
1:Port0 select A0 INPUT,A0 OUTPUT --RJ45

SEL1/READ_EN pin mode for Port1, NC FOR SMBUS MODE
0:Port1 select B0 INPUT,B0 OUTPUT --choose fiber
20K ohm to GND::Port1 select B0 INPUT,A0 OUTPUT --mix
Float:Port0 select A1 INPUT,B0 OUTPUT --mix
1:Port1 select A0 INPUT,A0 OUTPUT --RJ45

SEL1/READ_EN pin E2PROM mode
0:Port1 select B0 INPUT,B0 OUTPUT --choose fiber

INPUT_EN pin mode or smbus mode
0:normal operation.FANOUT disable,USE SEL PIN to select A ro B,INPUT enable always
20K ohm to GND:Greserved
Float:USE SEL PIN to select A ro B enable,fanout disable
1:normal operation.FANOUT enable,USE SEL PIN to select A ro B,INPUT enable always

EQ_D0
EQ_D1
EQ_S0_AD3
EQ_S1_AD2 (PIN MODE)
Equalizer set,set 0,suggest layout <5inch

DEM_S0_SDA
DEM_S1_SCL
DEM_D0_AD1
DEM_D1_AD0 (PIN MODE)
De-emphasis and output voltage set

LEVEL	DEM_D1 DEM_S1	DEM_D0 DEM_S0	VOD Vp-p	DEM dB	INNER AMPLITUDE Vp-p	SUGGESTED USE(1)
1	0	0	0.6	0	0.6	FR4 <5 inch 4–mil trace
2	0	R	0.8	0	0.8	FR4 <5 inch 4–mil trace
3	0	Float	0.8	–3.5	0.55	FR4 10 inch 4–mil trace
4	0	1	0.9	0	1.0	FR4 <5 inch 4–mil trace
5	R	0	0.9	–3.5	0.45	FR4 10 inch 4–mil trace
6	R	R	0.9	–6	0.5	FR4 15 inch 4–mil trace
7	R	Float	1.0	0	1.0	FR4 <5 inch 4–mil trace
8	R	1	1.0	–3.5	0.7	FR4 10 inch 4–mil trace

Port10 10GBase-T (COMBO)

DVDDIOLED SUPPLY POWER FOR LED PIN
DDVDIO SUPPLY POWER FOR ALL OF IO EXCEPT LED AND MDIO/MDC PINs
DVDDIOM SUPPLY POWER FOR MDC/MDIO PINs

RTL8261 PHY		
Power Name	Voltage	Current
DVDDL	1V	1755mA
DVDDIO18	1.9V	5mA
DVDDIOM	3.3V	2mA
DVDDLED	3.3V	200mA
AVDDH_PHY	1.9V	380mA
AVDDL_PHY	1.0V	150mA
AVDDH_PLL	1.9V	50mA
AVDDL_PLL	1.0V	10mA
SVDD_TRX	1.0V	85mA
SVDD_CK	1.0V	50mA

Total Power 3W

PWR

Configure

MDI Order
1 : pair order swap to DCBA
0 : no SWAP(default)
PHY_DIS
1 : PHY function Disable (SW EN)
0 : PHY Enable
CLK_SEL
1 : OCS_LVDS
0 : XTAL
POB
1 : Disable LED Power on Blink Function
0 : Enable LED Power on Blink Function
Chip Mode
1 : media converter mode
0 : USXGMII mode
LED_AUTOP_DIS
1 : LED AUTO Polarity disable, LEDs active low
0 : En LED AUTO Polarity
JTAG_DIS
1 : Dis JTAG Function
0 : En JTAG Function

PHY Address:0X0

LED

Just use for debug

LED3 LED4 LED5

Clock

MDI Swap on RJ45 side

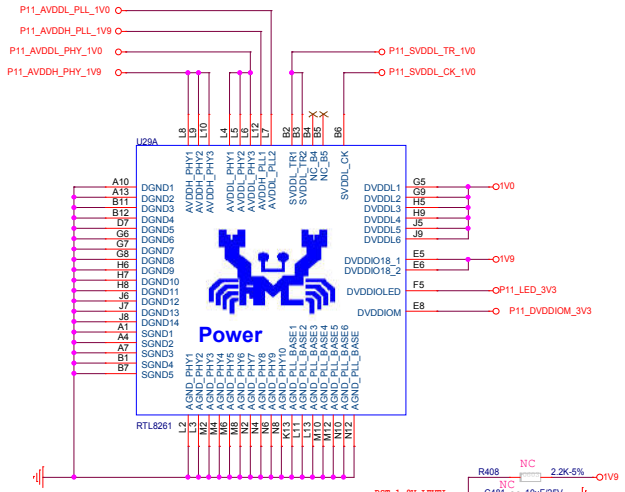
A--------->TP3
B--------->TP2
C--------->TP1
D--------->TP0

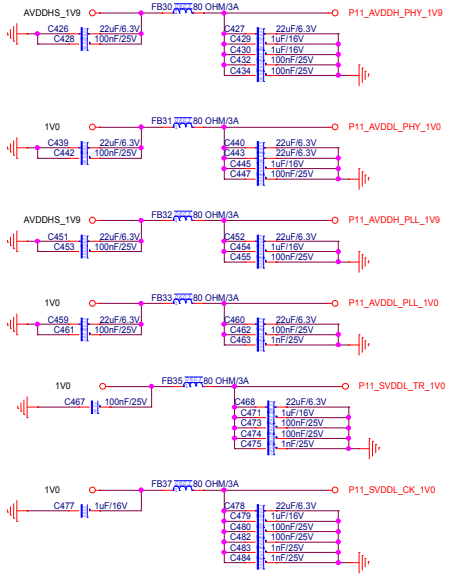
Port11 10GBase-T (COMBO)

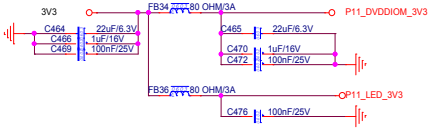
DVDDIOLED SUPPLY POWER FOR LED PIN
DDVDIO SUPPLY POWER FOR ALL OF IO EXCEPT LED AND MDIO/MDC PINs
DVDDIOM SUPPLY POWER FOR MDC/MDIO PINs

RTL8261 PHY		
Power Name	Voltage	Current
DVDDL	1V	1755mA
DVDDIO18	1.9V	5mA
DVDDIOM	3.3V	2mA
DVDDLED	3.3V	200mA
AVDDH_PHY	1.9V	380mA
AVDDL_PHY	1.0V	150mA
AVDDH_PLL	1.9V	50mA
AVDDL_PLL	1.0V	10mA
SVDD_TRX	1.0V	85mA
SVDD_CK	1.0V	50mA

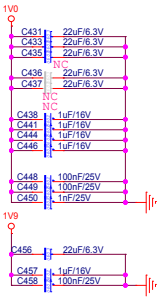
Total Power 3W

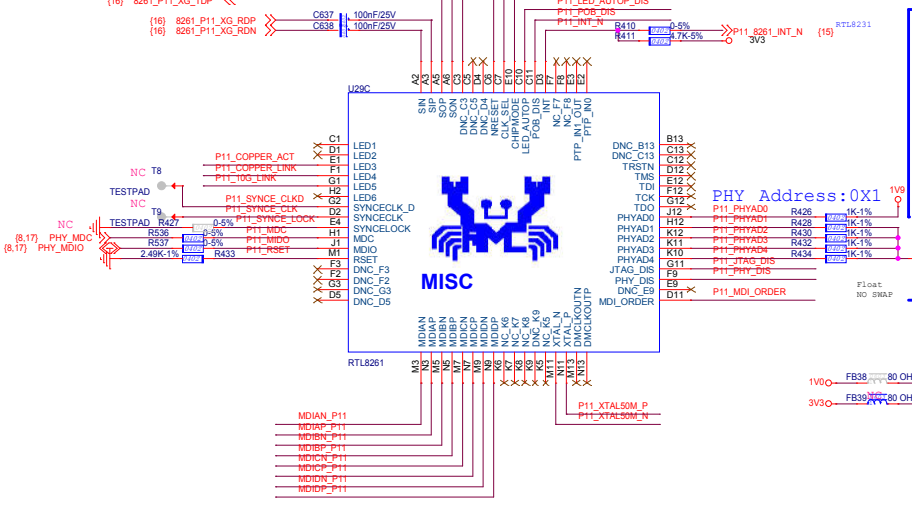


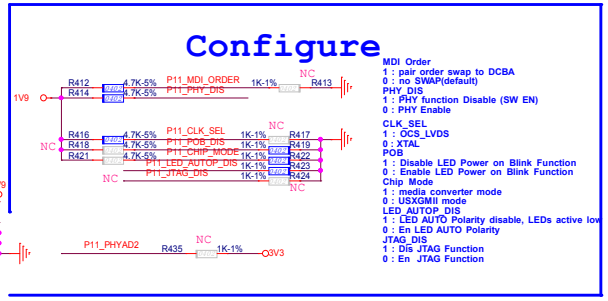


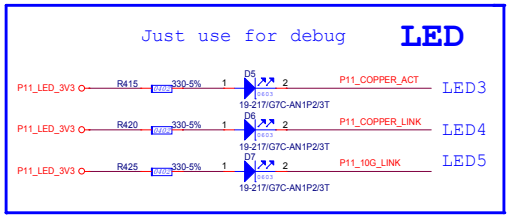


PWR

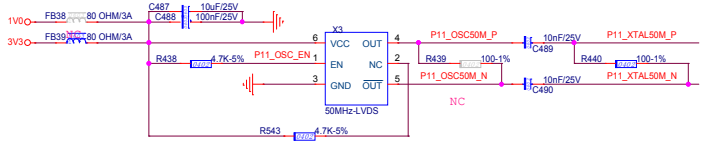


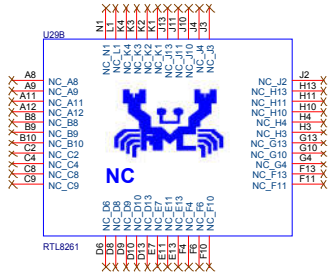


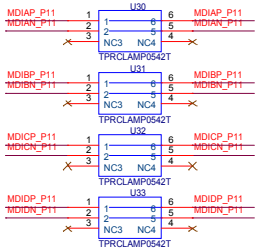




PHY Address:0X1







MDI Swap on RJ45 side
A--------->TP3
B--------->TP2
C--------->TP1
D--------->TP0